

Proceedings of the Agent 2005 Conference on Generative Social Processes, Models, and Mechanisms

Co-hosted by

Argonne National Laboratory
The University of Chicago

In association with

North American Association for Computational Social and Organizational Science

Gleacher Center

450 North Cityfront Plaza Drive
Chicago, Illinois



THE UNIVERSITY OF
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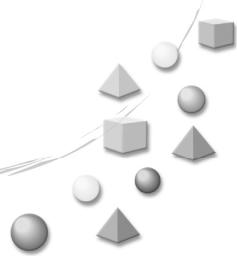
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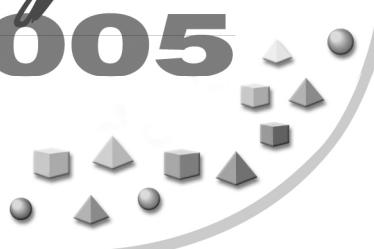
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Edited by:
Charles Macal, Michael North, and David Sallach



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FOREWORD

Welcome to Agent 2005, co-sponsored by Argonne National Laboratory and the University of Chicago. Since this Chicago conference series on agent simulation began in 1999, it has focused on three priorities: (1) social simulation models, (2) tools and toolkits, and (3) how these first two priorities are applied in diverse application areas. These priorities, which are also Special Interest Groups in the North American Association for Computational Social and Organizational Science (NAACSOS), have helped us to attract quality papers and, thus, to keep the conference fresh and stimulating. As supporters of NAACSOS, we encourage you to become active as well and, thereby, advance the field of computational social science.

The theme of this conference is *Generative Social Processes, Models, and Mechanisms*. Social agent simulation is increasingly recognized as an effective methodology within the social sciences, particularly applicable to a growing range of policy issues. At the same, the deep and dynamic complexity of the domain continues to challenge social modelers. Several approaches have emerged with the potential to address social complexities. One strategy is to design and employ multi-mechanism models. This strategy provides a way for specialized mechanisms to progress at their own pace, while participating in a broader model, and also facilitates the cooperation of diverse subject-matter experts. A second approach is more embryonic. Social complexity is generated by the interaction of social agents. Accordingly, much of the richness of social institutions and processes is emergent. Using generative software to generate social dynamics thus appears to provide a natural strategy. Software can be generative in two senses: it generates a customized simulation application from a common ontology or set of principles and, also, situated agents, as individuals and collectivities, dynamically generate and evolve preferences, plans, communication, action, and consequences. These two approaches by no means exhaust research creativity in social simulation, and the Agent 2005 conference is pleased to highlight all such innovations.

As in previous years, our goal is to share our models and results, stimulate and learn from each other, and identify areas in which progress is both necessary and possible. We believe you will find the regular sessions to be rich and substantial, and the invited speakers to be stimulating and insightful. We also value (and record) the discussions in each section and, thereby, make them available for future reference in the conference *Proceedings*.

We hope you enjoy Agent 2005 and become increasingly committed to the kinds of social science progress that computational modeling makes possible. Once again, welcome.

*The Center for Complex Adaptive Agent Systems Simulation
Argonne National Laboratory and The University of Chicago*

Charles Macal
Michael North
David Sallach
Thomas Wolsko

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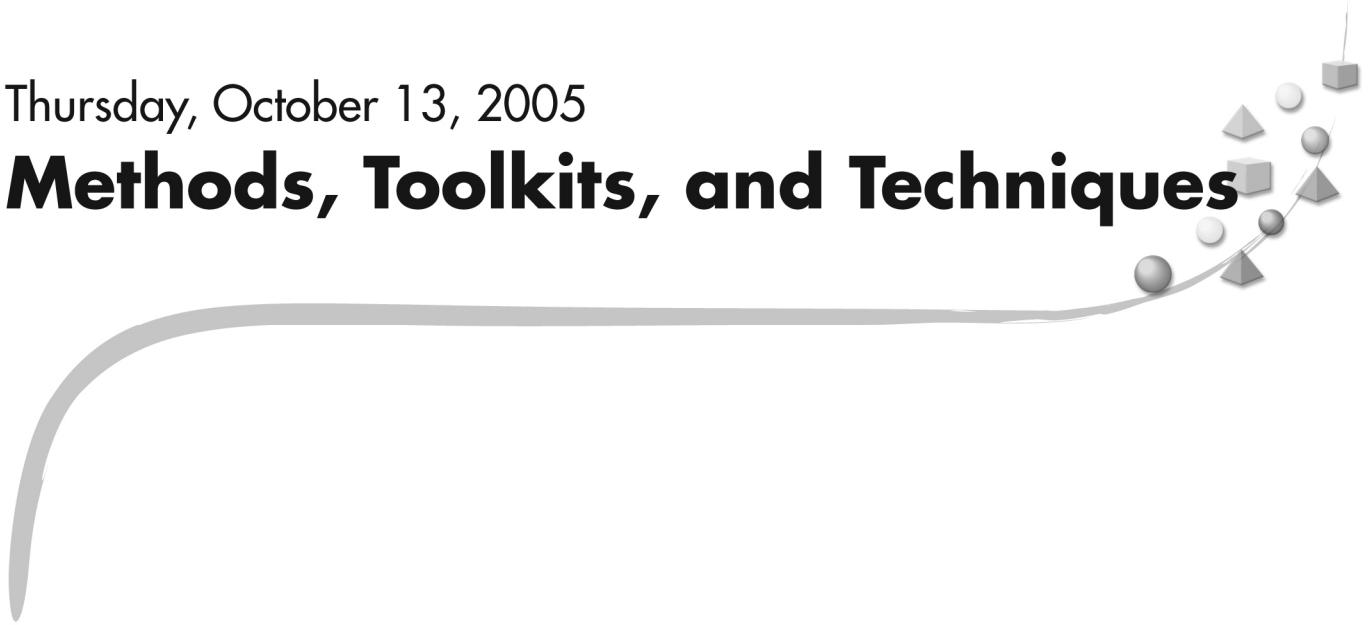
We acknowledge the support of many people in organizing *Agent 2005*. Kathy Ruffatto handled registration, administration, and logistics, along with assistance from Dee Albarado. Guy Pandola managed the conference Web site. Argonne's Technical Services Division prepared the program book and the proceedings for publication. Margaret Clemmons served as project manager and editor, with support from Michele Nelson in graphic design and Argonne's Document Processing Center.

ORGANIZING COMMITTEE

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Thomas Wolsko, Argonne National Laboratory

Thursday, October 13, 2005

Methods, Toolkits, and Techniques



Integrating Agent Modeling Toolkits and Critical Applications

